

Opportunities and challenges in lifelong learning and continuing professional development among nurses at a cancer hospital in Sri Lanka



Hirushi Kawya Munasinghe¹ , Kodippili Arachchige Vathmi Shavenka Suraweera¹, Weerakkody Appuhamilage Dineth Harshan Weerakkody¹ , Ukwattage Dona Hiruni Kanchana¹ , and Faiz Mohideen Mohamed Thassim Marikar ^{2*}

¹ Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

² Staff Development Centre, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

Abstract

Background: Continuing Professional Development (CPD) and lifelong learning are essential for nurses to keep up to date with innovations, technological enhancements, and development in the healthcare sector to improve patient outcomes and safety.

Objective: The study aimed to identify platforms, awareness, and barriers to CPD and lifelong learning of nursing professionals at Cancer Hospital (Apeksha), Maharagama, Sri Lanka.

Methods: A quantitative survey was conducted, and a self-administered questionnaire was used to collect samples from April 2022 to February 2023. Random sampling techniques were used to select the samples from the population of nurses. The study sample size was 235, and only 200 nurses responded.

Results: Descriptive statistics were calculated, and cross-tabulations were also employed. The nursing professionals in the study setting are characterized by a significant gender imbalance, with most nurses being female (86.5%) and males

* Correspondence:

Dr. Faiz Mohideen Mohamed Thassim Marikar

Staff Development Centre, General Sir John Kotelawala Defence University, Ratmalana, 10350, Sri Lanka

Email: faiz@kdu.ac.lk

Article info

Received: 6 May 2023 | Revised: 13 May 2023 | Accepted: 1 June 2023

This is an Open Access article distributed under the terms of the [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/), which allows others to remix, tweak, and build upon the work non-commercially as long as the original work is properly cited. The new creations are not necessarily licensed under the identical terms.

comprising a minority (13.5%). Most nurses have one to five years of experience, with just over a third (37.5%) having between one to ten years of experience. Family responsibilities, poor physical health, and financial constraints were identified as the most common barriers to engaging in CPD. Workplace stress, lack of financial aid, lack of opportunities, leave issues, inflexible work hours, and workload at the ward/unit were the most commonly agreed-upon organizational barriers in CPD. Despite various channels for accessing CPD activities, including colleagues and the workplace, a significant proportion of respondents were not aware of opportunities and platforms through these channels, highlighting the need for increased awareness and accessibility of CPD opportunities.

Conclusion: CPD is crucial for nurses to grow their careers and improve their knowledge and abilities. Main obstacles such as family obligations, financial restraints, and occupational stress must be overcome to motivate nurses to engage in CPD activities and foster professional progress. There should be a proper mechanism to increase the awareness of CPD among nurses.

Keywords

Continuing Professional Development; lifelong learning; nurses; cancer hospital; healthcare service; Sri Lanka

Background

Continuous Professional Development (CPD) and lifelong learning of health professionals have been discussed in the literature by many researchers nationally and internationally. CPD is central to nursing professionals' lifelong learning, updating them in knowledge, skill, and practice. They should continuously engage in CPD to maintain the standards of nursing care through best practices (Mlambo et al., 2021). The majority of health professionals believe that the most critical aspect of CPD is an improvement of patient care followed by an opportunity for awareness of current Evidence-Based Practices (Marikar & Perera, 2020). The American Nurses Association defines CPD as "a lifelong process of active participation by nurses in learning activities that assist in developing and maintaining their continuing competence, enhancing professional practice, and supporting the achievement of their professional goals" (Mlambo et al., 2021). As a result, promoting CPD among nurses and equipping them with essential professional knowledge and skill is an important aspect of their human resource management.

According to the worldwide nursing status report for 2020, there is a global shortage of 5.9 million nurses (Lovelace, 2020). A sufficient supply of nursing

personnel and growing workloads limit nurses' possibilities for advancement; older nurses were shown to be less interested in pursuing extra academic education possibilities for their growth when compared to younger peers (Yu et al., 2022). Researchers have developed and tested different theoretical facts in health professionals' CPD and lifelong learning. Bell et al. (2020) attempted to study how the education and training of healthcare professionals transfer to practice and benefit the patients. Study shows the importance of developing teams rather than individuals to enhance CPD by improving the knowledge-transferring process among nurses, especially new and old staff.

A main stimulating factor is personal effort, while work-family conflict is the most significant impediment to their development. Encourage the development of a sustainable workforce in the health care institution. It is required to increase job management to emphasize the importance of position, enrich the training of expert nurses, and execute hierarchical training (Yu et al., 2022). Self-motivation, relevance to practice, desire for workplace learning, enabling solid leadership, and favorable workplace culture are the elements that maximize the impact of nursing and inter-professional continuing development (King et al., 2021). Nurses' skills and expertise must be updated to reflect current circumstances. CPD is critical to nurses' lifetime learning and crucial for keeping their knowledge and skills current (Mlambo et al., 2021). CPD of Health Care Workers (HCWs) is prioritized in sub-Saharan Africa, like in many other countries, by considering its impact on advancing the treatment and prevention actions for diseases, mainly due to twin TB/HIV epidemics exacerbated by severe HCW shortages. The study shows that the CPD is the critical component needed to strengthen healthcare service, and key players in the process are implementers, regulators, and developers at different levels (Feldacker et al., 2017).

Nursing care quality, patient safety, nurse satisfaction, and healthcare costs improve due to nurses' ongoing professional development of CPD. However, existing literature shows that nurses' participation in CPD is rare, and when they do participate, it seldom meets their actual needs (Vázquez-Calatayud et al., 2021). Therefore, CPD must be considered mandatory in healthcare settings that directly impact better patient care. Furthermore, Mandatory Continuing Professional Development Programs (MCPDP) may enable health professionals to keep on par with updated technologies and new trends in the field (Ingwu et al., 2019). Professional nurses in South Africa also confirmed that the CPD should be compulsory for registration at the nursing council (Frances & Annatjie, 2019). This situation emphasizes that the professional bodies can be played a major role in developing lifelong learning and CPD among nursing professionals in any context.

The Health Professions Council (HPC) registers and regulates Allied Health Professionals (AHPs). It is now a requirement for HPC-certified workers. The HPC describes CPD as a variety of learning activities that individuals can engage in throughout their careers to ensure that they can operate legally, safely, and effectively within an increasing scope of practice. CPD aims to help individuals develop their talents to modify and enhance their practice and service delivery. It should be an ongoing process of professional and personal development (Gibbs, 2011). Enhancement of professional development in a practical way, it is necessary to understand the motivators that drive nurses' participation in specific types of learning events. Nurses might use these findings to raise their knowledge of why and how they grow professionally. Managers and human resource development specialists could better create techniques to meet nurses' requirements (Pool et al., 2016). The European Centre of Excellence for Research in CPD intends to establish a pan-European network of researchers, physicians, regulators, and professional bodies to enhance information sharing and improve the science of CPD. Researchers examine the influence of CPD requirements on Newly Qualified Nurses and Midwives (NQNM's) "Intention to quit" and "Job satisfaction." (Abhayasinghe & Seneviratne, 2022; Kearns, 2021).

Challenges of CPD faced by nursing professionals are also discussed widely in the existing literature. It is essential to have a proper plan for CPD, which is developed by considering all the relevant facts. Neglecting on patient experience to plan CPD as its starting point, lack of attention on fund allocation at a national level, and insufficient measurements on the impact of CPD on service outcome were highlighted as contemporary challenges of CPD among nurses (Jackson & Manley, 2022). In a local context, researchers show that the baseline skills were lower than baseline knowledge on patient safety among nursing officers, which indicates the need for more practical components rather than theoretical content in training programs. However, the post-test of the same study showed a significant enhancement in skills with the training module developed (Wijemanne et al., 2019).

CPD is essential for the nurses' lifelong learning. It is required for nurses to uplift and maintain their knowledge and skills up to date throughout their careers. This important concept will automatically boost better health care and treatments for patients. CPD paves the way for the fast development of the health sector of Sri Lanka. This study aims at the opportunities and the awareness of nurses and the barrier to CPD and opportunities and challenges in lifelong learning and CPD amongst nurses at Cancer (Apeksha) Hospital, Sri Lanka.

Methods

Study Design

This study used a quantitative survey to explore the opportunities and challenges in lifelong learning and CPD among nurses at a cancer hospital known as Apeksha Hospital in Sri Lanka. That is a public hospital located in the city of Colombo, providing services related to cancer, trauma, and other critical illnesses. The study was carried out from April 2022 to February 2023.

Samples/Participants

The study population of this research is nurses who are working at Apeksha Hospital. In this study, a random sampling technique was used. The sample was selected from the population of 600 nurses who worked at the hospital.

As an inclusion criterion, nurses who had given consent to take part voluntarily. During the research study, some nurses did not consent to participate. Additionally, due to the busy and chaotic ward conditions, nurses who worked in specialist units such as ICUs, PICUs, and critical care units were unable to be reached for the study project. Consequently, they were excluded from the study's sample.

In this study, the sample size was calculated using a formula by Krejcie and Morgan in 1970, as cited in [Chaokromthong and Sintao \(2021\)](#). The calculation is as follows.

$$n = Z^2 \frac{P(1-P)}{D^2}$$

The sample size (n) is calculated according to the formula:

$$n = [z^2 * p * (1 - p) / e^2] / [1 + (z^2 * p * (1 - p) / (e^2 * N))]$$

$$z = 1.96, p = 0.5, N = 600, e = 0.05$$

$$n = [1.962 * 0.5 * (1 - 0.5) / 0.052] / [1 + (1.962 * 0.5 * (1 - 0.5) / (0.052 * 600))]$$

$$n = 384.16 / 1.6403 = 234.206$$

$$n \approx 235$$

In this study, the sample size was calculated at a 95% confidence interval. The sample size for the study was determined to be 235 nurses, calculated using the values of $z = 1.96$, $p = 0.5$, $N = 600$, and $e = 0.05$ in the formula. The sample size (with finite population correction) is equal to 235.

Instruments

A self-administered questionnaire was used as the data collection tool. The questionnaires were structured into five sections, each with a specific set of questions developed by experts in the field.

Part A included questions about the general information and socio-demographic data of the participation. Part B gave priority to the open-ended questions that allowed the nurses to provide more details and unstructured responses. Part C included pain scale questions designed to assess the nurses' experiences with CPD. Part D included questions to identify awareness of opportunities in CPD/trigger questions, which were designed to gather information about the nurses' knowledge and understanding of certain concepts. Finally, part E included solution questions designed to collect information about the problems or challenges faced by them in CPD and the lifelong learning process. Both close-ended and open-ended questions were included in the questionnaire.

On the day of the data collection, the researchers identified themselves to the respondents and explained the purpose of the study. The questionnaire was completed without interfering with the participant's activities in the wards. The data collection tool was validated by the panel of experts from the Department of Nursing & Midwifery, Faculty of Allied Health Sciences, Kotelawala Defence University, Sri Lanka. The pretest of this questionnaire was done before administration to the participants, and revalidated the questionnaire. The questionnaire was justified because it was prepared by an experienced research group working in education and has already been tested and validated before distribution.

Data Collection

Once the Ethical Review Committee (ERC) approval and Hospital approval was taken and permissions had been obtained, the researchers provided the nurses with information about the study and gave them the opportunity to decide whether they wished to participate. Those who agreed to participate were asked to complete a self-administered questionnaire, which took approximately 30 minutes to complete. The questionnaire was administered by the researchers on the day of the study and was completed without disrupting the participants' work in the wards.

Data Analysis

After collecting the data through the questionnaire, data analysis was done using a statistical package for social sciences (SPSS) version 25. Descriptive statistics were used to analyze and present the data utilizing frequency tables, cross-tabulation, and chi-square test. Statistical significance was considered $p \leq 0.005$, and the confidence interval was 95%. Open-ended questions were analyzed by the thematic analysis method.

Ethical Considerations

Ethical clearance was obtained from the Ethical Review Committee (ERC) of General Sir John Kotelawala Defence University. Participants were given an information sheet regarding the details of the study verbally explained, and the opportunity was given to ask questions, and clarifications were provided. A consent form was given to the participants before the procedure, and both verbal and written consent were obtained from the participants after explaining the purpose of the study. Informed all the participants that they could withdraw at any time before the data analysis was initiated if they wanted to quit the study.

Results

Social Demographic Data

This research was based on opportunities and challenges in lifelong learning and CPD among nurses at Apeksha Hospital. There were only 200 nurses enrolled in the study, and the response rate was about 85.1%. Among the 200 nurses who participated in the survey, 48% nurses were between the ages of 20 – 29 (n = 96); within these 96 nurses, 94 nurses were in grade 3, the other two nurses were in grade 2, 37.5% nurses were between the ages of 30 – 39 (n = 75), within these 75 nurses most of the nurses were from grade 2 and grade 3, those amounts are 30 and 36 respectively. 9% were between the ages of 40 – 49 (n = 18), with an equal number of nurses from grades 1 and 2, and 5.5% were in grade 1 between the ages of 50 – 59 (n = 11). It shows the percentage of gender engaged in the study. Approximately 86.5% (n = 173) of the nurses are female. Only 13.5% (n=27) of nurses are male, as females drive the profession.

Table 1 further illustrates the relationship between marital status and the grade of nursing appointments. Among 200 nurses, 105 nurses are married. Within these 105 married nurses, 51, 28, and 26 were grade 3, grade 2, and grade 1, respectively. The total number of single nurses (n = 90) was divided into 78 nurses to grade 3, 11 nurses to grade 2, and 1 nurse to grade 1. Among the 200 nurses, three widowed nurses were among them, two from grades 1 and 2 nurses from grade 1. The divorced and separated nurses' amounts are equal (n = 1). Due to the figure, 52.5% of nurses were married (n = 105), 45% of nurses were single (n = 90), 1.5% of nurses were widowed (n = 3), and 5% equal percentage of nurses were divorced and separated (n = 1).

Furthermore, most of the nurses have 1 – 5 years of working experience 37.5% (n = 75), 23% of nurses have more than ten years of experience (n = 46), 22% of nurses have less than one year of experience (n = 44), and 17.5% nurses have 5 – 10-year experience (n = 35). Most were grade 3 nurses, 65% (n = 130). The least

number of nurses were grade 1 nurses, 14.5% (n = 29); the rest were grade 2 nurses, 20.5% (n = 41). In addition, the majority of nurses completed only a diploma level 81% (n = 162), the least number of nurses completed postgraduate diplomas 3% (n = 6), and 16% of nurses completed a degree program (n = 32). The majority amount of family members was four members percentage was 30%, and there were 37%, 31%, 30%, 16%, and 3% for the number of family members 3, 5, 2, 6, and 7, respectively.

Table 1 Demographic data – Basic information

Demographic		Grade 1	Grade 2	Grade 3	Total	Frequency	Percentage
Age	20-29	0	2	94	96	96	48.0
	30-39	9	30	36	75	75	37.5
	40-49	9	9	0	18	18	09.0
	50-59	11	0	0	11	11	05.5
Gender	Male				27		13.5
	Female				173		86.5
Marital Status	Married	26	28	51	105		
	Single	1	11	78	90		
	Widowed	1	2	0	3		
	Divorced	1	0	0	1		
	Separated	0	0	1	1		
Nursing Appointment	Grade 1					29	14.5
	Grade 2					41	20.5
	Grade 3					130	65.0
Nurses Experience	< 1 Year					44	22.0
	1-5 Years					75	37.5
	5-10 Years					35	17.5
	>10 Years					46	23.0
Highest Level of Education	PGD					6	3.0
	Degree					32	16.0
	Diploma					162	81.0
Number of Members	< 2					31	15.5
	3-5					128	64.0
	>6					20	10.0

Opened Ended Questions

Study findings show that 52% of nurses at Apeksha Hospital, Maharagama, Sri Lanka attended training programs, while 48 % did not attend training programs as professional nurses. Further, the study explores their training experience and the main themes identified based on the responses. Active participation of nursing staff in in-service training (n = 74). In-service education refers to the continuing education and professional development programs that nurses participate in throughout their careers. According to the findings, nurses at Apeksha Hospital attended different categories of in-service training, including training in Psychiatric, First Aids, Intensive Care Unit (ICU), palliative care,

Emergency and trauma care, pain management, pediatrics, dialysis, colostomy care, operation theatre, Pain medication workshop, and diabetic education program respectively. It shows that the training opportunities they experienced are directly relevant to their profession to keep dating their knowledge and skills.

Engage in higher educational activities (n = 38). Some of the nurses at Apeksha Hospital have been engaged in higher education activities, including following a BSc nursing degree and conducting postgraduate research, which will positively impact on standards of the profession. According to the findings, 14% of individuals attended training programs on CPD, while 86% of participants did not participate. It indicates that fewer nursing professionals in the study setting have shown interest in participation in CPD programs which may badly affect career development. However, this may be due to many barriers, such as lack of time, funding issues, etc. Overall, these findings reflect a requirement for a proper strategy for building enthusiasm and support for CPD among the nurses to increase their participation.

According to the findings, it seems that nurses rely heavily on nursing-related publications for acquiring knowledge, with 45% of participants reporting that they do so. However, it also appears that a significant proportion of participants (more than 55%) do not use nursing-related publications as a source of knowledge acquisition. Standard and reputed research publications may help nurses to refresh their knowledge and to be on par with innovations in the field.

Pain Scale Questions – Experienced and Barriers to CPD

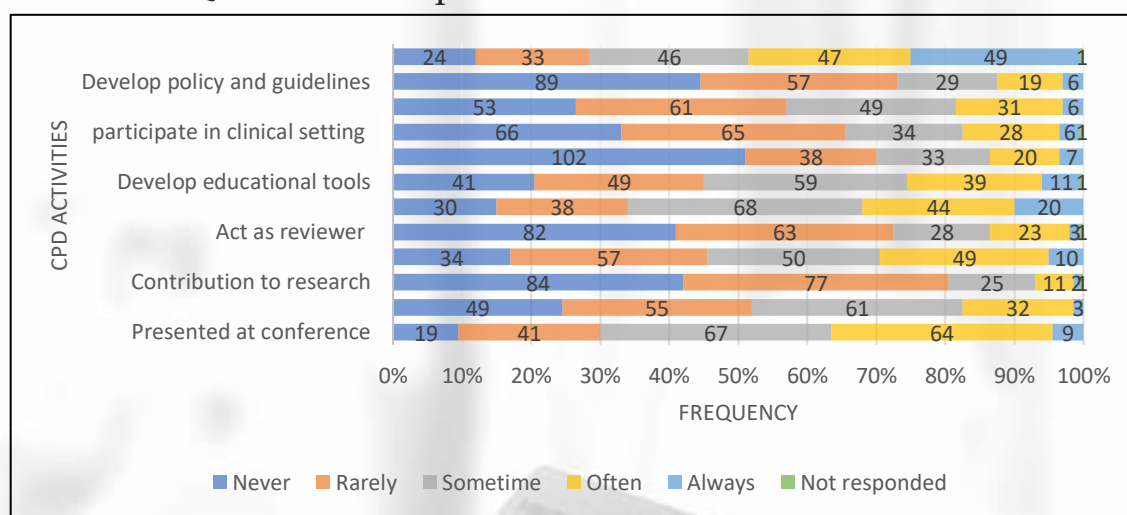


Figure 1 Experience of respondents with continuing professional development

Figure 1 represents findings on the experience of respondents with CPD. The participants were asked to indicate how often they engage in various CPD activities, ranging from never to always or not responding. The main twelve (12)

CPD activities are identified as related to nursing professionals. In addition, results show that watching video learning activities online is the nurses' most experienced CPD activity (n = 49). Presented at the conference: most respondents reported that they sometimes present at conferences (n = 67) or attend them (n = 64), with a smaller number saying that they often (n = 9) or rarely (n = 41) do. Followed/attended CPD programs: most respondents reported that they rarely (n = 55) or sometimes (n = 61) follow or attend CPD programs, with fewer respondents reporting that they often (n = 32) or never (n = 49) do. Contribution to research: most respondents said that they never (n = 84) contribute to research, while a smaller number reported that they rarely (n = 77), sometimes (n = 25), or often (n = 11) do. Publish articles: most respondents said that they sometimes (n = 50) or frequently (n = 49) publish articles, with a smaller number reporting that they rarely (n = 57), often (n = 49), or never (n = 34) do.

Act as a reviewer: most respondents reported that they never (n = 82) act as reviewers, while a smaller number said that they rarely (n = 63), sometimes (n = 28), or often (n = 23) do. Complete a self-directed learning package: most respondents reported that they sometimes (n = 68) or frequently (n = 44) complete self-directed learning packages, with fewer respondents reporting that they rarely (n = 38) or never (n = 30) do. Develop educational tools: most respondents said that they sometimes (n = 59) or rarely (n = 49) develop educational tools, with a smaller number reporting that they often (n = 39) or never (n = 41) do. Act as a mentor: most respondents said that they never (n = 102) act as mentors, while a smaller number reported that they rarely (n = 38), sometimes (n = 33), or often (n = 20) do. Please participate in the clinical setting: most respondents said that they sometimes (n = 34) or rarely (n = 65) participate in a clinical setting, with a smaller number reporting that they often (n = 28) or never (n = 66) do. Participated in discussion group: most respondents reported that they rarely (n = 61) or sometimes (n = 49) participate in discussion groups, with fewer respondents reporting that they often (n = 31) or never (n = 53) do. Develop policy and guidelines: most respondents said that they never (n = 89) develop policies and procedures, while a smaller number reported that they rarely (n = 57), sometimes (n = 29), or often (n = 19) do. Watch a video learning activity online: most respondents said that they often (n = 49) or sometimes (n = 46) watch video learning activities online, with fewer respondents reporting that they rarely (n = 33), never (n = 24), or not responded (n = 1) do. The survey suggests that respondents engage in various CPD activities to varying degrees, with most respondents reporting that they sometimes engage in these activities. The activities said to be least common include acting as a mentor, contributing to research, serving as a reviewer, and developing policy and guidelines.

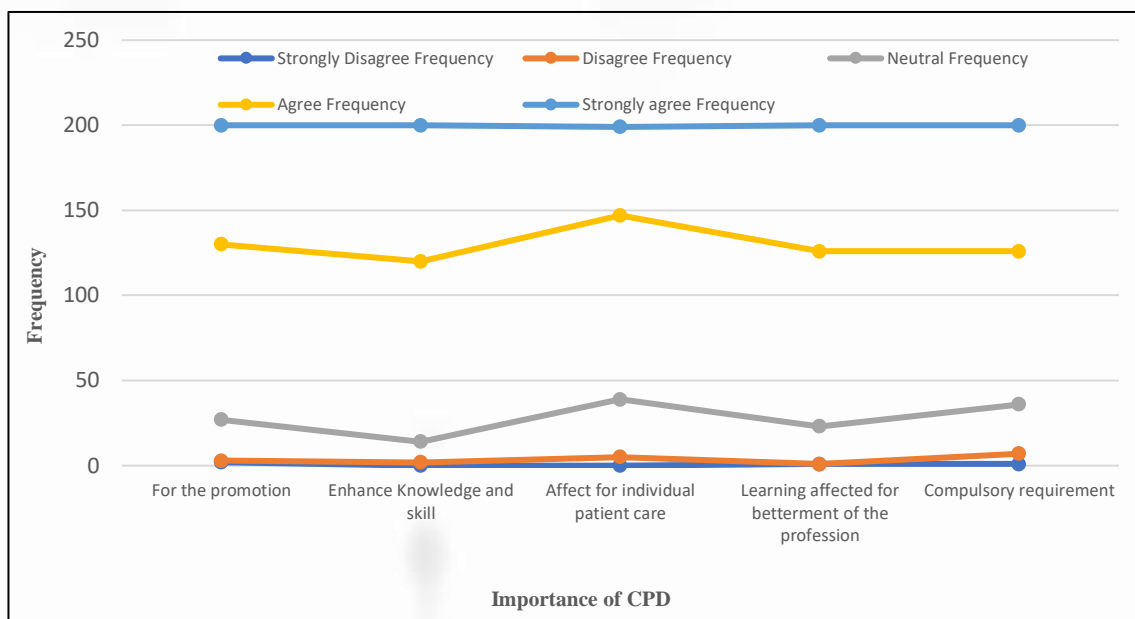


Figure 2 Represents a survey on the importance of continuing professional development

Figure 2 represents a survey on the importance of CPD in various aspects. Participants were asked to rate their level of agreement with various statements on a five-point scale, ranging from strongly disagree to strongly agree. For the promotion: most respondents agreed or strongly agreed that CPD is essential for career advancement, with (n = 70) strongly agreeing and 103 agreeing. Enhance knowledge and skill: most respondents also agreed or strongly agreed that CPD is vital for enhancing their knowledge and skills, with 80 strongly agreeing and (n = 106) agreeing. Effect on individual patient care: While most respondents were neutral (n = 34), (n = 5) participants disagreed and decided that CPD affects personal patient care. Learning affected the betterment of the profession: most respondents agreed or strongly agreed that CPD is essential for improving the work, with (n = 74) strongly agreeing and (n = 103) agreeing. The compulsory requirement is that most respondents agreed or strongly agreed that CPD is a mandatory requirement, with (n = 74) strongly agreeing and (n = 90) agreeing. Overall, the survey suggests that CPD is necessary for career advancement, enhancing knowledge and skills, improving the profession, and as a compulsory requirement. While fewer respondents agreed that CPD affects individual patient care, a significant number of respondents still recognized its importance in this aspect.

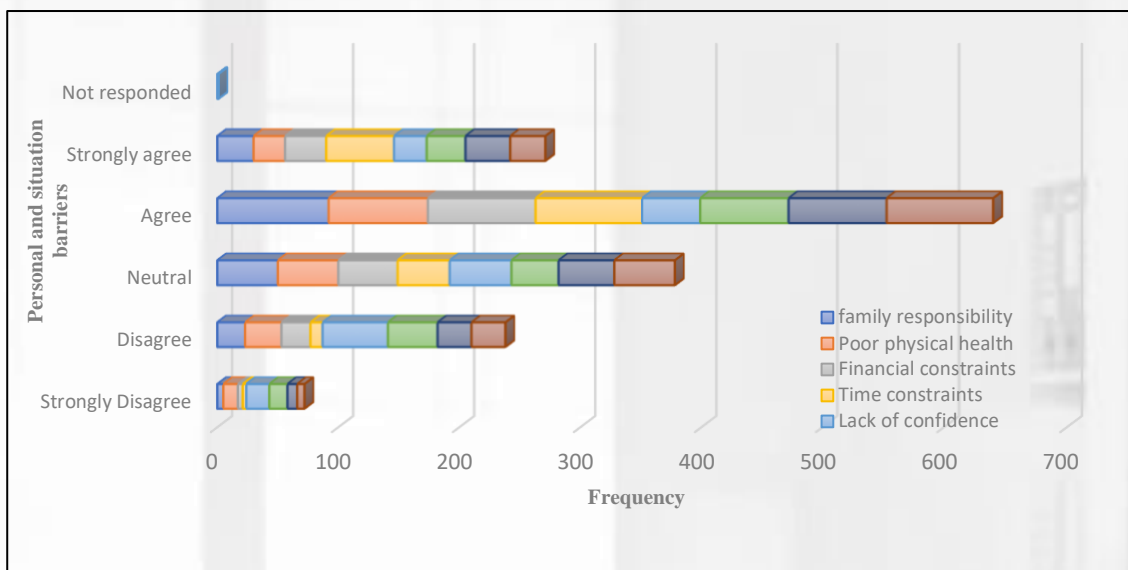


Figure 3 Factors that hinder their engagement in professional development

Figure 3 shows the distribution of responses to a survey question or statement that asked respondents to identify the factors that hinder their engagement in professional development or continuing education. The respondents were asked to rate their agreement with different ideas on a five-point Likert scale, from “Strongly Disagree” to “Strongly Agree,” with an additional option for “Not Responded.” The figure displays the frequency distribution of responses for eight factors that may act as barriers. These include family responsibilities, poor physical health, financial constraints, time constraints, lack of confidence, lack of interest, lack of awareness of CPD, and emotional stress (anxiety). Figure 3 displays the number of responses in each category for each factor. For example, for the element of “family responsibilities,” five respondents strongly disagreed, ($n = 23$) disagreed, ($n = 50$) were neutral, ($n = 92$) agreed, and ($n = 30$) strongly agreed. The chart does not include the number of respondents who have yet responded. Figure 3 shows that respondents identified several factors that may hinder their engagement in professional development or continuing education. The most common barriers were time constraints, lack of confidence, and lack of interest. These factors were rated higher than other potential barriers, such as poor physical health or financial limitations. However, it is worth noting that many respondents were neutral on these factors or did not respond at all, indicating a lack of clarity or awareness on the subject. Figure 3 provides valuable insights into the factors hindering engagement in professional development or continuing education and could be used to inform interventions or strategies to address these barriers.

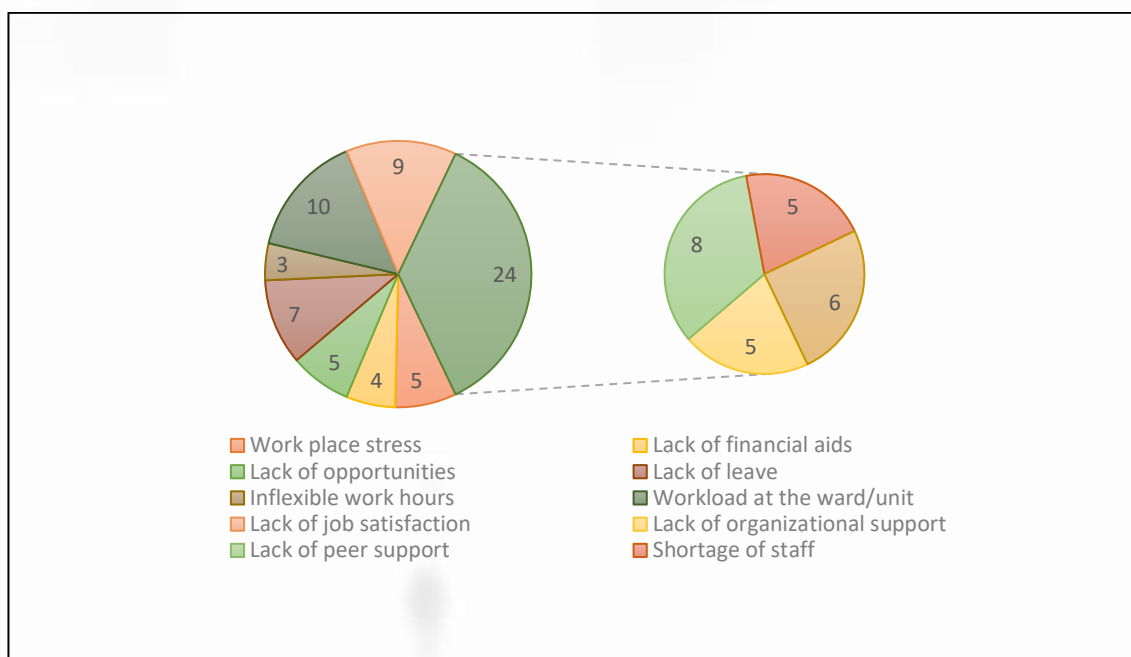


Figure 4 Factors contributing to stress and job dissatisfaction among healthcare workers

Figure 4 presents the frequency distribution of responses to a survey regarding various factors contributing to stress and job dissatisfaction among healthcare workers. The factors included in the study are workplace stress, lack of financial aid, lack of opportunities, lack of leave, inflexible work hours, the workload at the ward/unit, lack of job satisfaction, lack of organizational support, lack of peer support, shortage of staff, and lack of motivation. The responses are categorized into five levels of agreement, ranging from strongly disagree to strongly agree. The frequencies for each station of the agreement are presented for each factor. For example, (n = 5) respondents strongly disagree, (n = 11) disagree, (n = 28) are neutral, (n = 93) agree, and (n = 63) strongly agree that workplace stress is a factor that contributes to their stress and job dissatisfaction. Figure 4 provides a quick overview of the most significant factors that affect healthcare workers' job satisfaction and well-being. It indicates that workload at the ward/unit, lack of peer support, and staff shortage are the most commonly agreed upon factors contributing to stress and job dissatisfaction among healthcare workers, with a relatively high percentage of respondents agreeing or strongly agreeing with these statements.

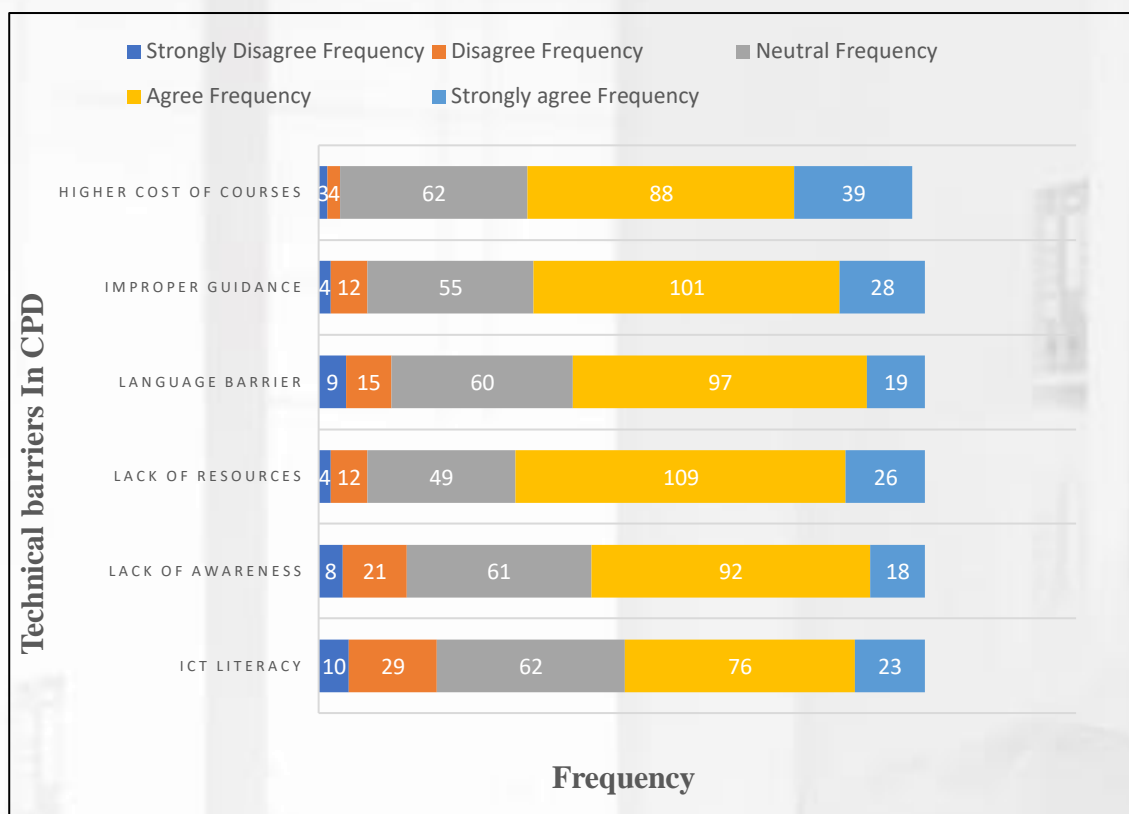


Figure 5 Barriers affecting continuing professional development

Figure 5 represents a survey on technical and other barriers affecting CPD. The participants were asked to rate their level of agreement with various statements on a five-point scale, ranging from strongly disagree to strongly agree. The results show that: ICT literacy is the least significant barrier, with only ($n = 23$) respondents strongly agreeing that it affects CPD. Lack of awareness is also not considered an important issue, with only ($n = 18$) strongly agreeing that it affects CPD. Lack of resources is viewed as a more significant barrier, with ($n = 26$) strongly agreeing that it affects CPD. The language barrier is a relatively substantial issue, with ($n = 19$) strongly agreeing that it affects CPD. Improper guidance is considered a more significant barrier, with ($n = 28$) strongly agreeing that it affects CPD. The higher cost of courses is viewed as the most significant barrier, with ($n = 39$) strongly agreeing that it affects CPD. The survey suggests that the higher cost of systems is the most significant barrier to CPD, followed by lack of resources, improper guidance, language barrier, lack of awareness, and ICT literacy.

Trigger Questions – Awareness of Opportunities

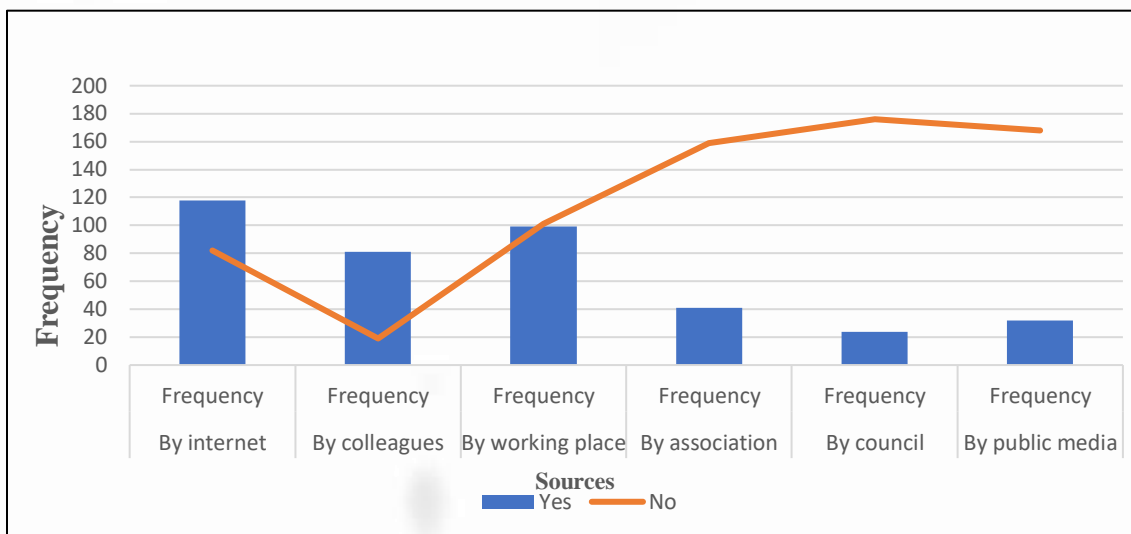


Figure 6 Information sources on continuing professional development

Figure 6 shows the frequencies of responses to whether nurses have accessed information on CPD through various sources. The sources listed in the chart are the Internet, colleagues, working place, associations, council, and public media. The data shows that the majority of nurses have accessed information on CPD through the Internet ($n = 118$), followed by working place ($n = 99$) and colleagues ($n = 81$). However, many nurses have not accessed information on CPD through these sources, as indicated by the “No” responses. In contrast, fewer nurses have accessed information on CPD through the association ($n = 41$), council ($n = 24$), and public media ($n = 32$). The data suggests that these sources may be less effective in disseminating information on CPD to nurses than other sources.

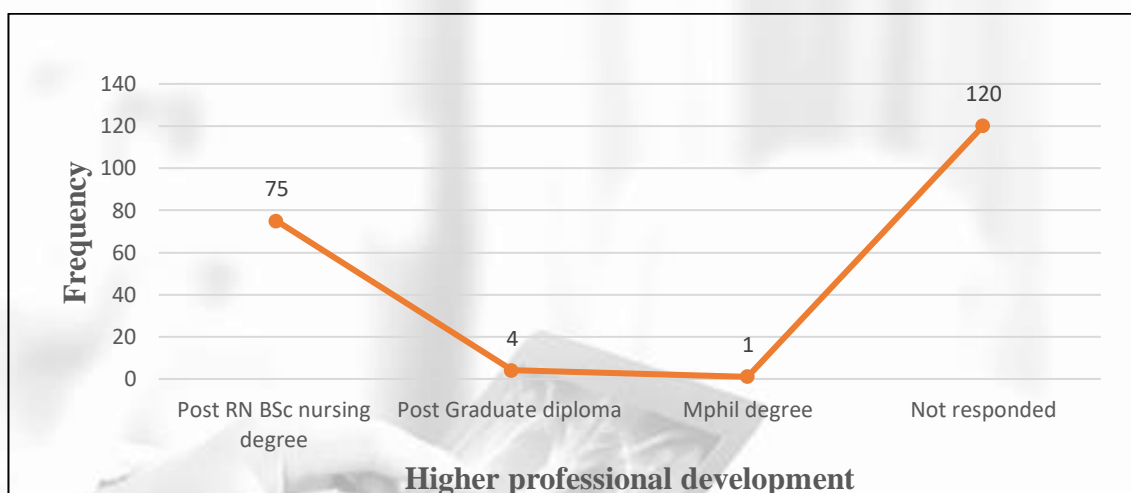


Figure 7 Professional development and pursuing higher education

Figure 7 represents the frequency of respondents who have completed or are pursuing higher professional development programs in nursing. Out of ($n = 120$)

respondents, (n = 75) have met a post-RN BSc nursing degree program, four have completed a post-graduate diploma program, and only one has completed an MPhil degree program. The remaining (n = 40) respondents have yet to respond with their completed program information.

Solution Questions

The most common strategy mentioned is establishing awareness workshops about CPD (n = 39), indicating the need for educating nurses about the importance and benefits of CPD. Another frequently mentioned strategy is to facilitate CPD programs (n = 64), which include providing opportunities for nurses to participate in various learning activities, such as conferences, seminars, and training programs. Other strategies involve establishing mentoring and counseling programs (n = 17) to support nurses in their CPD journey, establishing unions for CPD (n = 11) to promote collaboration and sharing of knowledge among nurses, and expanding the workforce (n = 17) to address the shortage of nurses and provide more opportunities for professional development. Overall, the data suggest that there is a need to establish support systems and resources to facilitate CPD activities among nurses. This includes creating unions or associations, establishing mentoring and counseling programs, conducting awareness workshops, and providing resources and support for CPD programs. In addition, expanding the nursing workforce is also seen as essential to support CPD activities.

Table 2 Cross relation between age vs. experience as a staff nurse and the grade of the nursing appointment

Characteristics	Category	Age group				Chi-Square	p
		20-29	30-39	40-49	50-59		
Experience as a staff nurse	<1 Year	44	0	0	0	181.829	0.000
	1-5 Years	50	24	1	0		
	5-10 Years	2	31	2	0		
	>10 Years	0	20	15	11		
The grade of the nursing appointment	Grade 1	0	9	9	11	163.223	0.000
	Grade 2	2	30	9	0		
	Grade 3	94	36	0	0		

Based on [Table 2](#) presented, there appears to be a notable correlation between age and experience as a staff nurse, with a p-value of less than 0.05. Similarly, the table suggests a significant association between age and the highest level of education achieved, with a p-value of less than 0.05. Additionally, the table indicates a statistically significant relationship between age and grade of nursing appointment, with a p-value of less than 0.05.

Table 3 Cross relation between gender vs. highest level of education, experience as a staff nurse, and the grade of the nursing appointment

Characteristics	Category	Gender		Chi-Square	p
		Male	Female		
Highest level of education	Post graduate diploma	0	6	1.642	0.208
	Degree	3	29		
	Diploma	24	138		
Experience as a staff nurse	<1 year	7	37	3.629	0.355
	1-5 years	6	69		
	5-10 years	5	30		
	>10 years	9	37		
The grade of the nursing appointment	Grade 1	4	25	0.067	0.858
	Grade 2	6	35		
	Grade 3	17	113		

On the other hand, [Table 3](#) does not demonstrate a significant association between gender and the highest level of education attained, with a *p*-value greater than 0.05. Likewise, there seems to be no significant relationship between gender and experience as a staff nurse, with a *p*-value greater than 0.05. Similarly, the table does not appear to indicate a statistically significant correlation between gender and the grade of the nursing appointment, with a *p*-value greater than 0.05.

Moreover, [Table 4](#) implies a significant association between the grade of the nursing appointment and the highest level of education achieved, with a *p*-value of less than 0.05. Finally, the table suggests a significant relationship between the grade of the nursing appointment and experience as a staff nurse, with a *p*-value of less than 0.05.

Table 4 Cross relation between the grade of the nursing appointment vs. the highest level of education and experience as a staff nurse

Characteristics	Category	The grade of the nursing appointment			Chi-Square	p
		Grade 1	Grade 2	Grade 3		
Highest level of education	Post graduate diploma	4	1	1	25.284	0.000
	Degree	7	12	13		
	Diploma	18	28	116		
Experience as a staff nurse	<1 Year	0	0	44	206.992	0.000
	1-5 Years	0	2	73		
	5-10 Years	1	25	9		
	>10 Years	28	14	4		

Discussion

Locally and internationally, nursing education is confronted with various obstacles and is undergoing extensive reformation. To maintain a high standard of nurses, quality of care, and scholastic achievement, nurses must recognize and overcome the challenges that come with the twenty-first century ([Ingwu et al.,](#)

2019). These challenges include those related to technology, economics, and ethnic diversity, as well as those pertaining to aligning nursing education with practice settings, incorporating nursing as an essential component of the health workforce, and dealing with them. In addition, this transition is made challenging by the lack of understanding regarding CPD and lifelong learning, which is made worse by the current task overload, the inadequate reinforcement, and the difficulty accessing academics when educators are also acting as clinical practitioners (Frances & Annatjie, 2019; Lera et al., 2020; Palma et al., 2020).

Pool et al. (2016) also aimed to investigate the relationship between nurses' motivations and CPD activities by examining the types of learning activities they participate. The study utilized semi-structured interviews with a qualitative approach (Brekelmans et al., 2016). This study included 200 nurses. Of those, 48% were between the ages of 20 and 29. Of those, 37.5% of nurses were between the ages of 30 and 39. Of those, 9% of nurses were between 40 and 49. Of those, 5.5% of nurses were between the ages of 50 and 59. Approximately 86.5% of the nurses are female. Only 13.5% of nurses are male, as females drive the profession. The data demonstrate that the majority of the nurses are Newly Qualified Nurses (NQN) who need support for CPD, which enables their job satisfaction and enhancement of knowledge. Kearns (2021) also emphasized the importance of designing proper CPD programs for newly qualified nurses.

Further, newly recruited nurses may not better understand their career development needs. Literature also proved that they do not have a clear picture of the professional enhancement needs (Yu et al., 2022). Age variations may show a relationship between experience and opportunities in CPD, as older nurses are more advantaged than younger nurses (Khatri et al., 2021). Some other study shows contradictory findings as older nurses are disadvantaged as they are limited to the same wards for a long period, which may provide fewer opportunities in a different experience. Some nurses have worked in the same department for fifteen to thirty years (Vázquez-Calatayud et al., 2021).

Study findings show that 81% of nurses only completed a diploma program, 3% of nurses only completed a postgraduate diploma, and 16% of nurses finished a degree program. The majority of the nurses in the study setting earned diploma-level academic qualifications in our study. While it has remained constant for Registered Nursing Assistants (RNA) in Slovenia, the ratio of male to female nurses with a bachelor's degree has altered over time in favor of male nurses. The average percentage of female nurses with a bachelor's degree varied between 2010 and 2019, from 93.83% in 2010 to 88.66% in 2019, and for male nurses, from 6.17 to 11.34% (Prosen, 2022).

The present study shows 52% of nurses have attended any training program, while 48% did not. Training programs attended by the nurses were identified as In-service education, BSc nursing degree, Psychiatric training, and Postgraduate research. Findings demonstrated that many nurses have participated in any training program that may affect their job satisfaction, career development, and knowledge enhancement. Literature shows that nurses attended different types of programs, including clinical training, leadership program, short courses, soft skills development programs, and many others, in order to increase competence in job satisfaction and self-esteem (Pool et al., 2016).

The findings of the present study show 14% of nurses were engaged in a training program on CPD, and 86% of nurses were not engaged in a training program during their career. It denotes that most nurses at Apeksha Hospital did not attend a CPD event, which may negatively affect their job satisfaction and professional development. It may be due to many obstacles faced by them, including lack of awareness, less organizational support, and personal barriers. A previous study has been conducted to identify barriers to nurses' participation and utilization of clinical research in three hospitals within Kumasi Metropolis, Ghana; scientific research findings serve as the foundation for excellent nursing practice. The extent of research application in the clinical context, as well as nurses' involvement in and familiarity with research findings, have drawn significant interest on a global scale. The percentage of nurses who have participated in clinical research was 57 (36.1%) out of 158 participants, whereas 101 (63.9%) had never done so (after graduating from nursing school). Only 3 (1.9%) of the 57 nurses who had taken part in clinical research (after graduating from nursing school) were the principal investigators of those studies, while 43 (27.2%) were study participants and 11 (7.0%) data gatherers. The extent of participation by the nurses in clinical research ranged substantially among the various hospitals. Only 17 (29.8%) of the 57 individuals who had ever taken part in the study came from Kumasi South, and 10 (17.5%) came from KNUST Hospitals (Nkrumah et al., 2018).

Based on the results of the current study, 93.5% of nurses are not utilizing the mobile application on CPD, while 6.5% are not utilizing the mobile application. The number of smartphone apps for health professionals has skyrocketed in recent years. In Sri Lanka, the mobile app on CPD has been activated through many platforms, such as the Ministry of Health, Sri Lanka Nursing Council, etc., enabling easy paths to explore relevant opportunities. However, findings show that this facility is not yet popular among nurses. Yet, among healthcare professionals like nurses, there is a lack of awareness regarding the professional use, educational requirements, and perceived quality of these apps. The usage of health applications by these professionals could have a significant impact on the

future of modern healthcare, given that nursing is the largest sector of the healthcare workforce in many nations. The Nurses Association of Barcelona invited all registered nurses to take part in a 34-item online survey. One thousand two hundred ninety-three nurses eventually took part in the survey; however, 52 nurses did not correctly complete it and were therefore disqualified from the analysis. The majority of survey participants were women (474/600, 79.0%), with the remaining men (126/600, 21.0%) making up around half of the respondents (600/1241, 48.35%). The most frequently used and installed app categories among nurses were those that dealt with medical information, health calculators, and health recommendations. The majority of nurses who responded to the question on the significance of having specialized training on using and prescribing health apps (354/433, 81.8%) thought this point was a highly pertinent issue (Mayer et al., 2019).

The study has implied that 45% of nurses refer to nursing-related publications, and 55% of nurses are not referring nursing related publications. Referring to nursing-related publications provides ample room for nurses to refresh their knowledge of new trends in the field. It helps them to gain updated knowledge and to be on par with the latest findings, which ultimately affects better health care service. In addition, readers consult the literature to learn about new studies and find evidence to inform and modify their practice for a better outcome. Nursing's Relevance in Nursing Publications Our main channels for disseminating this knowledge and new information to others are journal articles, websites, books, and other publications (Oermann et al., 2019). According to the survey results, most respondents reported participating in various professional development activities. Among the participants, 33.5% reported presenting at conferences, while 30.5% reported sometimes attending or following CPD programs. In contrast, most respondents (42%) indicated that they never contributed to the research, and 41% of respondents reported that they never acted as reviewers. Furthermore, 78% of the respondents stated the availability of in-house seminars and symposiums (Aboshaiqah et al., 2012).

Based on the research findings, the majority of the respondents strongly believed in the importance of CPD for career advancement, as evidenced by 35% strongly agreeing and 51.5% agreeing. Additionally, a significant number of respondents (40% strongly agreeing and 53% agreeing) acknowledged the vital role that CPD plays in enhancing their knowledge and skills. Furthermore, 54% of the respondents agreed that CPD has an impact on individual patient care. The finding of a previous study conducted with 94 nurses, 38 occupational therapists, and 50 physiotherapists shows that CPD is a qualification to apply for promotion

(N = 180), while (N = 181) agrees with the statement "To increase my professional knowledge" (Ryan, 2003).

Findings show the distribution of responses to a survey question that asked respondents to identify the factors that hinder their engagement in professional development or continuing education.

The study reveals that the most cited barriers were family responsibilities (46%), poor physical health (41%), and financial constraints (44.5%). Time constraints were also identified as a significant barrier by 72% of respondents, who either agreed or strongly agreed. Lack of interest was mentioned as a barrier by 52.5% of the respondents who agreed or strongly agreed, while 49% acknowledged emotional stress as a factor. Furthermore, lack of confidence was highlighted as a significant barrier by 37.5% of those who agreed or strongly agreed, and 63.5% of the respondents who either agreed or strongly agreed cited a lack of awareness of CPD as a hindrance. Lack of support from the organization, language barrier, and lack of technological skills can be found as some of the barriers proved by previous studies (Aboshaiah et al., 2012; Campos-Zamora et al., 2022; Jackson & Manley, 2022). The results indicate that the most commonly agreed-upon organizational barriers affecting CPD were workplace stress, lack of financial aid, lack of opportunities, lack of leave, inflexible work hours, and workload at the ward/unit.

A significant proportion of respondents (38%) agreed or strongly agreed that their ICT literacy skills were a barrier to CPD. Almost half of the respondents (46%) agreed or strongly agreed that a lack of awareness was a barrier to CPD. The previous study, "CPD: Views and Barriers Toward Participation Among Malaysian Pharmacists, " was a cross-sectional study to investigate the types of CPD activities that pharmacists prefer and the obstacles they face in participating in CPD. Furthermore, respondents showed relatively lower agreement levels with statements related to the quality of learning activities (53.9%), learning styles (44.7%), and family constraints (42.5%). Subjects or topics being too specialized (39.0%), personal priorities of learning in relation to other activities (37.1%), and professional burnout (40.6%) were the least agreed upon factors in terms of affecting participation in group learning activities (Aziz et al., 2013).

According to the data, 59% of respondents were aware of CPD opportunities through the Internet, while 40.5% were aware through colleagues, and 49.5% were aware through their workplace. Only 12% of respondents were aware of opportunities through public media, while 40.5% were aware through associations and 16% through the council. The survey respondents were asked about their participation in higher professional development programs. 37.5% of respondents reported having completed a Post RN BSc nursing degree. In

addition, 2% of respondents said having completed a Post Graduate diploma, and 0.5% reported having completed an MPhil degree.

The study identified several strategies proposed by nurses to facilitate CPD in the nursing profession. Among the most common methods were establishing awareness workshops about CPD ($n = 39$) and facilitating CPD programs ($n = 64$) to provide opportunities for nurses to participate in learning activities. Other strategies included establishing mentoring and counseling programs ($n = 17$), unions for CPD ($n = 11$) to promote collaboration and knowledge sharing, and expanding the workforce ($n = 17$) to address the shortage of nurses and provide more opportunities for professional development.

Implications of the Study

Several implications of this study: 1) This study provides data to identify lifelong learning and CPD platforms associated with nursing. 2) To determine the awareness of opportunities among nurses at Apeksha Hospital, Sri Lanka. 3) To identify the barriers to lifelong learning and CPD they face. The findings of this study conclude that a positive number of nurses had been engaged in training programs. Besides, the results of this study show a low number of nurses were engaged in CPD programs. Moreover, the study proves awareness of mobile applications on CPD was significantly low. Apart from that, the study implied that half the number of nurses were not engaged with nursing-related publications. This study emphasizes that age and experience as a staff nurse are significantly related. Age and the highest level of education, age and grade of nursing appointment, grade of the nursing appointment, and the highest level of education and grade of the nursing appointment and experience as a staff nurse also prove a significant association ($p < 0.05$).

Based on the findings of the present study, it is recommended that an independent authority or section under the professional body should be established to oversee nursing, CPD, and lifelong learning in Sri Lanka. It should be empowered to identify and address barriers to professional development and should establish specific rules and regulations to ensure the provision of high-quality professional development education for all nurses. Furthermore, it is recommended that all nurses should engage in a minimum of one or more professional development programs annually to enhance their lifelong learning and career development. To encourage nurses to participate in these programs, a reward system should be established for those who successfully complete their professional development requirements.

There should be a proper mechanism to identify the actual needs of CPD for the different categories of nurses and have activities that fully fill their

requirements. If the authorized parties are involved in building a strategy to make nurses aware of available CPD opportunities, it will help increase their involvement. It is suggested to have a database regarding the CPD engagement of nursing professionals, which can be utilized as evidence for their career development and appraisal. Individual organizations also can have annual CPD plans for the nurses, thereby allocating sufficient funds which will be able to increase their job satisfaction. To ensure the generalizability of these findings, it is recommended that similar studies be conducted in various hospitals across Sri Lanka. These studies will help to identify any limitations of the present study and provide additional data to support the effectiveness of the recommended strategies.

The study results also highlight the importance of CPD for nurses, which will lead to advanced quality care and patient safety in healthcare. CPD is crucial for up-to-date knowledge and skills, improved clinical decision-making, enhanced competency, and performance, collaboration and interdisciplinary learning, integration of new technologies and innovations, ethical and patient-centered care, and continuous quality improvement. Overall, CPD fosters a culture of lifelong learning, enabling healthcare professionals to adapt to the evolving healthcare landscape, provide high-quality care, and prioritize patient safety. By continuously expanding their knowledge and skills, professionals contribute to advancing quality care and ensuring the well-being of their patients.

Limitations

Several limitations could influence the results of this study. First, this study was conducted as a questionnaire-based survey due to the restriction of the time framework. Second, this study was carried out in the Apeksha Hospital Maharagama, Sri Lanka, and data were only collected from nurses who had given consent to take part voluntarily working in general wards and departments; the study excluded nurses who were not consenting to participate in the research study. Third, due to busy and chaotic ward conditions, nurses who work in specialist units such as ICUs, PICUs, and critical care units will be unable to reach those nurses for our study project. As a result, they will be excluded from the study's sample. Finally, there are many hospitals all over the country that investigators have not covered; thus, the study findings cannot be viewed as a good representation of all nurses in Sri Lanka.

Conclusion

Nurses provide independent and team-based care to people of all ages, families, groups, and communities, whether they are ill or not and regardless of the

location. It involves the support of good health, the avoidance of disease, and the care of the sick, the disabled, and the dying. Nurses play a crucial part in healthcare at hospitals and during emergencies and are frequently unsung heroes. They serve on the front lines of disease prevention and primary health care delivery, including promotion, prevention, treatment, and rehabilitation, and are frequently the first to identify medical emergencies. Care of the highest caliber is the focus of nursing. Maintaining the abilities and knowledge required to safeguard patient safety is vital to living up to that expectation. This is what motivates the need for nurses to pursue ongoing education. Healthcare is constantly changing. To improve patient outcomes, continuing education enables registered nurses to upgrade their knowledge and abilities. Since that nurses should keep up with new technologies and often find themselves in demand, it might also facilitate professional growth. Hence nurses need to be well-furnished with knowledge development and possess a positive involvement with career development to increase the quality of professional life.

Declaration of Conflicting Interest

The authors declared no significant competing financial, professional, or personal interests might have influenced the performance or presentation of the work described in this manuscript.

Funding

None.

Acknowledgment

We would like to thank Director, Dr. Aruna Jayasekara, and the Special Grade Nursing Officer of Apeksha Hospital Maharagama, Mr. Priyantha Jayarathne, for granting us access to the hospital premises and providing invaluable guidance. Additionally, we extend our gratitude to the section matrons and ward sisters of Apeksha Hospital Maharagama for their advice and direction.

Authors' Contributions

All authors met the ICMJE authorship criteria. In addition, all authors were accountable for each step of the study and approved the final version of the article to be published.

Authors' Biographies

Ms. Hirushi Kavva Munasinghe graduated from the Faculty of Allied Health Science as a Nurse and working at the General Sir John Kotelawala Defence University.

Ms. Kodippili Arachchige Vathmi Shavenka Suraweera graduated from the Faculty of Allied Health Science as a Nurse and working at the General Sir John Kotelawala Defence University.

Mr. Weerakkody Appuhamilage Dineth Harshan Weerakkody graduated from the Faculty of Allied Health Science as the Nurse and working at the General Sir John Kotelawala Defence University.

Ms. Ukwattage Dona Hiruni Kanchana is a Senior Assistant Librarian at the Faculty of Allied Health Sciences of the General Sir John Kotelawala Defence University.

Dr. Faiz Mohideen Mohamed Thassim Marikar works as the Director at the Staff Development Centre at General Sir John Kotelawala Defence University, Sri Lanka.

Data Availability Statement

Data were available upon request to the corresponding author.

Declaration of the Use of AI in Scientific Writing

Nothing to declare.

References

- Abhayasinghe, K., & Seneviratne, S. (2022). Why nurses should continue their professional education? *Sri Lankan Journal of Nursing*, 1(2). <https://doi.org/10.4038/sljn.v1i2.31>
- Aboshaiqah, A. E., Qasim, A., Abualwafa, N., & Al-Bashaireh, A. M. (2012). Barriers for continuing professional development among nurses in Saudi Arabia. *Middle East Journal of Nursing*, 6(3), 22-27.
- Aziz, Z., Jeta, C. N., & Abdul Rahman, S. S. (2013). Continuing professional development: views and barriers toward participation among Malaysian pharmacists. *The European Journal of Social & Behavioural Sciences*, 4(1), 45-55. <https://doi.org/10.15405/ejbs.2013.1.6>
- Bell, D. J., Self, M. M., Davis Iii, C., Conway, F., Washburn, J. J., & Crepeau-Hobson, F. (2020). Health service psychology education and training in the time of COVID-19: Challenges and opportunities. *American Psychologist*, 75(7), 919-932. <https://doi.org/10.1037/amp0000673>
- Brekelmans, G., Maassen, S., Poell, R. F., Weststrate, J., & Geurdes, E. (2016). Factors influencing nurse participation in continuing professional development activities: Survey results from the Netherlands. *Nurse Education Today*, 40, 13-19. <https://doi.org/10.1016/j.nedt.2016.01.028>
- Campos-Zamora, M., Gilbert, H., Esparza-Perez, R. I., Sanchez-Mendiola, M., Gardner, R., Richards, J. B., Lumbreras-Marquez, M. I., & Dobiesz, V. A. (2022). Continuing professional development challenges in a rural setting: A mixed-methods study. *Perspectives on Medical Education*, 11(5), 273-280. <https://doi.org/10.1007/s40037-022-00718-8>
- Chaokromthong, K., & Sintao, N. (2021). Sample size estimation using Yamane and Cochran and Krejcie and Morgan and green formulas and Cohen statistical power analysis by G* Power and comparisons. *Apheit International Journal*, 10(2), 76-86.
- Feldacker, C., Pintye, J., Jacob, S., Chung, M. H., Middleton, L., Iliffe, J., & Kim, H. N. (2017). Continuing professional development for medical, nursing, and midwifery cadres in Malawi, Tanzania and South Africa: A qualitative evaluation. *PloS One*, 12(10), e0186074. <https://doi.org/10.1371/journal.pone.0186074>
- Frances, S., & Annatjie, P. (2019). Professional nurses' perception of compulsory continuing professional development. *Nursing & Primary Care*, 3(6), 1-4.
- Gibbs, V. (2011). An investigation into the challenges facing the future provision of continuing professional development for allied health professionals in a changing healthcare environment. *Radiography*, 17(2), 152-157. <https://doi.org/10.1016/j.radi.2011.01.005>
- Ingwu, J. A., Efekalam, J., Nwaneri, A., Ohaeri, B., Israel, C., Chikeme, P., Madu, O., Opara, H., & Omotola, N. (2019). Perception towards mandatory continuing professional development programme among nurses working at University of Nigeria Teaching Hospital, Enugu-Nigeria. *International Journal of Africa Nursing Sciences*, 11, 100169. <https://doi.org/10.1016/j.ijans.2019.100169>
- Jackson, C., & Manley, K. (2022). Contemporary challenges of nursing CPD: Time to change the model to meet citizens' needs. *Nursing Open*, 9(2), 880-891. <https://doi.org/10.1002/nop2.941>
- Kearns, T. (2021). The impact of Continuing Professional Development on nurses' wellbeing and satisfaction. *Professionii Infermieristiche*, 74(4), 256-256. <https://doi.org/10.7429/pi.2021.744256b>
- Khatri, R. J., Van Teijlingen, E., Marahatta, S. B., Simkhada, P., Mackay, S., & Simkhada, B. (2021). Exploring the challenges and opportunities for continuing professional development for nurses: A qualitative study with senior nurse leaders in Nepal. *Journal of Manmohan Memorial Institute of Health Sciences*, 7(1), 15-29. <https://doi.org/10.3126/jmmihs.v7i1.43147>
- King, R., Taylor, B., Talpur, A., Jackson, C., Manley, K., Ashby, N., Tod, A., Ryan, T., Wood, E., & Senek, M. (2021). Factors that optimise the impact of continuing professional development in nursing: A rapid evidence review. *Nurse Education Today*, 98, 104652. <https://doi.org/10.1016/j.nedt.2020.104652>
- Lera, M., Taxtsoglou, K., Iliadis, C. K., Frantzana, A. A., & Kourkouta, L. (2020). Nurses' attitudes toward lifelong learning via new technologies. *Asian/pacific Island Nursing Journal*, 5(2), 89-102. <https://doi.org/10.31372/2F20200502.1088>
- Lovelace, B. J. (2020). WHO says there's a global shortfall of 5.9 million nurses as world battles coronavirus pandemic. *CNBC*. <https://www.cnbc.com/2020/04/06/who-says-theres-a-global-shortfall-of-5point9-million-nurses-as-world-battles-coronavirus-pandemic.html>
- Marikar, F., & Perera, D. (2020). Perceptions of academia of different health professions towards inter professional education in Sri Lanka. *Journal of STEAM Education*, 4(1), 43-51.
- Mayer, M. A., Rodríguez Blanco, O., & Torrejon, A. (2019). Use of health apps by nurses for professional purposes: web-based survey study. *JMIR mHealth and uHealth*, 7(11), e15195. <https://doi.org/10.2196/15195>
- Mlambo, M., Silén, C., & McGrath, C. (2021). Lifelong learning and nurses' continuing professional development, a metasynthesis of the literature. *BMC Nursing*, 20, 1-13. <https://doi.org/10.1186/s12912-021-00579-2>
- Nkrumah, I., Atuhaire, C., Priebe, G., & Cumber, S. N. (2018). Barriers for nurses' participation in and utilisation of clinical research in three hospitals within the Kumasi Metropolis, Ghana. *Pan African Medical Journal*, 30(1). <https://doi.org/10.11604/pamj.2018.30.24.15230>
- Oermann, M. H., Chinn, P. L., Carter-Templeton, H., & Nicoll, L. H. (2019). The importance of nursing in nursing publications. *Nurse Author & Editor*, 29(3), 1-6. <https://doi.org/10.1111/j.1750-4910.2019.tb00043.x>
- Palma, J. A. F. S., Oducado, R. M. F., & Palma, B. S. (2020). Continuing professional development: Awareness, attitude, facilitators, and barriers among nurses in the Philippines. *Nursing Practice Today*, 7(3), 198-207. <https://doi.org/10.18502/npt.v7i3.3348>
- Pool, I. A., Poell, R. F., Berings, M. G. M. C., & Ten Cate, O. (2016). Motives and activities for continuing professional development: An exploration of their relationships by integrating literature and interview data. *Nurse Education Today*, 38, 22-28. <https://doi.org/10.1016/j.nedt.2016.01.004>
- Prosen, M. (2022). Nursing students' perception of gender-defined roles in nursing: A qualitative descriptive study. *BMC Nursing*, 21(1), 1-11. <https://doi.org/10.1186/s12912-022-00876-4>

- Ryan, J. (2003). Continuous professional development along the continuum of lifelong learning. *Nurse Education Today*, 23(7), 498-508. [https://doi.org/10.1016/S0260-6917\(03\)00074-1](https://doi.org/10.1016/S0260-6917(03)00074-1)
- Vázquez-Calatayud, M., Errasti-Ibarrondo, B., & Choperena, A. (2021). Nurses' continuing professional development: A systematic literature review. *Nurse Education in Practice*, 50, 102963. <https://doi.org/10.1016/j.nepr.2020.102963>
- Wijemanne, W., Gamini, L. P. S., & Sridharan, S. (2019). Strengthening of knowledge and skills on patient safety of nursing officers in a teaching hospital in Sri-Lanka. *Sri Lanka Journal of Management Studies*, 1(2). <https://doi.org/10.4038/SLJMS.V1I2.50>
- Yu, X., Huang, Y., & Liu, Y. (2022). Nurses' perceptions of continuing professional development: A qualitative study. *BMC Nursing*, 21(1), 1-8. <https://doi.org/10.1186/s12912-022-00940-z>

How to Cite This Article

Munasinghe, H. K., Suraweera, K. A. V. S., Weerakkody, W. A. D. H., Kanchana, U. D. H., & Marikar, F. M. M. T. (2023). Opportunities and challenges in lifelong learning and continuing professional development among nurses at a cancer hospital in Sri Lanka. *Journal of Healthcare Administration*, 2(1), 61-85. <https://doi.org/10.33546/joha.2695>